

**Amendments to the Claims**

Please amend claims 1 and 5 as provided below.

Please cancel claims 11-13 without prejudice or disclaimer.

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Currently amended) A method for suppressing pathological calcification of the meniscal and articular cartilage matrix in a subject in need thereof, comprising:  
administering to the subject an inhibitor of activation and/or activity of zymogen factor (FXIIIa) and tissue transglutaminase (tTGase) in chondrocytes in the cartilage matrix, wherein the inhibitor is ~~A20~~ or NG-monomethyl-L-arginine acetate (NMMA), thereby suppressing pathological calcification in the cartilage matrix in the subject.
2. (Previously presented) The method according to claim 1, wherein the inhibition of activation is accomplished by blocking production of a member selected from the group consisting of interleukins IL-1, IL-8, nitric oxide donor Noc-12, peroxyxynitrite generator Sin-1, tumor necrosis factor  $\alpha$  (TNF $\alpha$ ), and S100 family of proteins.
3. (Previously Presented) The method according to claim 1, wherein the inhibition of activation is accomplished by blocking TNF $\alpha$  receptor-associated signaling factors (TRAFs), TRAF2 and TRAF6.
4. (Canceled).
5. (Currently amended) A method for inhibiting TGase activity of zymogen Factor XIIIa (FXIIIa) and/or tissue transglutaminase (tTGase) in a chondrocyte, comprising contacting the

chondrocyte with an effective amount of an inhibitor of a  $\text{TNF}\alpha$  receptor-associated signaling factor (TRAF), wherein the inhibitor is ~~A20~~ or NG-monomethyl-L-arginine acetate (NMMA), thereby inhibiting tGase activity of zymogen Factor XIIIa (FXIIIa) and/or tissue transglutaminase (tGase) in the chondrocyte.

6. (Previously Presented) The method of claim 5, wherein the inhibitor is an inhibitor of IL-1, Noc-12, Sin-1, tumor necrosis factor  $\alpha$  ( $\text{TNF}\alpha$ ), and/or  $\text{TNF}\alpha$  receptor-associated signaling factor (TRAFs), TRAF2 and TRAF6.
7. (Withdrawn) The method of claim 5, wherein the inhibitor is a polynucleotide that inhibits tGase or FXIIIa expression.
8. (Previously Presented) The method of claim 5, wherein the method is performed *in vitro*.
9. (Previously Presented) The method of claim 5, wherein the method is performed *in vivo*.
10. (Previously Presented) The method of claim 9, wherein the chondrocyte is from a chondrocyte-derived cell line.

Claims 11-13. (Canceled).

14. (Withdrawn) The method of claim 11, wherein the conditions for inducing matrix calcification include contacting the chondrocyte with an agent that activates and/or increases activity of zymogen factor FXIIIa and/or tissue transglutaminase (tGase), wherein the agent affects the activity of IL-1, Noc-12, Sin-1, and/or tumor necrosis factor  $\alpha$  ( $\text{TNF}\alpha$ ).

15. (Canceled).